

REMARKS

The Reply, filed in response to the Office Action (Action) dated November 6, 2008, is believed to be fully responsive to all and every issue raised in the Action. Favorable reconsideration of the application is respectfully requested.

Previous Rejection and Claim Status

Applicants thank the Examiner for entering the amendments to the claims filed on October 16, 2008.

Applicants further thank the Examiner for withdrawing previous rejection under 35 U.S.C. § 102(b) over Smith et al. (US 6,962,949) (“Smith”).

Applicants further extend their appreciation that the Examiner acknowledges the claim for foreign priority as well as the receipt of the certified copies of the priority document.

Response to Claim rejection under 35 U.S.C. § 103(a)

On page 2 of the Action, claims 1-5 and 7-10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Yamanouchi et al. (US 2002/0107301).

Applicants note that the Office asserts that Smith teaches all elements of the pending claims, except the claimed dyes; that Yamanouchi teaches the claimed dyes; particularly the dyes of formula (M-I), (C-I), and (C-II) of Yamanouchi teaches the claimed dyes. The Office further asserts that one skilled in the art would have been motivated to combine Smith and Yamanouchi to reach the claimed invention, because one skilled in the art would know that the oil-soluble dyes taught by Yamanouchi can be readily converted into a water-soluble form simply by neutralizing the acid groups with bases; and that it would have been obvious to one of ordinary

skill in the art to have neutralized the dyes of Yamanouchi and employed them in the inks taught by Smith so that a UV absorber is not needed and the resulting inks have improved lightfastness, waterfastness, and are resistant to intercolor bleed. See page 5, paragraphs 8-9 of the Action.

Applicants respectfully disagree.

The presently claimed subject matter is an ink-jet ink with improved ozone resistance and water resistance, containing a specific water-soluble anionic dye and water-soluble cationic polymer, recited in the claims.

Smith teaches that lightfastness may be improved by an aqueous ink containing an anionic dye, poly-quaternary amine compound and UV absorbing compound.

Yamanouchi teaches that the water resistance and ozone resistance may be improved by an ink containing a coloring particulate (oil-soluble dye) and latex.

However, the dyes taught by Smith have a different structure from the dyes recited in the currently presented claim of the instant application, as the Office correctly admits. The Office asserts that one skilled in the art would have been motivated to convert oil-soluble dyes of Yamanouchi into water-soluble dyes. However, applicants respectfully submit that the Office fails to provide rationale as to why one skilled in the art would choose the oil-soluble dyes among various dyes including existing water-soluble dyes and convert them into water-soluble. The Office's assertion appears to be hind-sight, which is prohibited in determining patentability under 35 U.S.C. § 103.

In detail, Smith teaches improved lightfastness, which is considered to be attributed by co-existing UV absorbing compounds (Smith cites US 6,054,505, which lists example of the polymer useful to improve water resistance, and US 6,005,022, which lists examples of the polymer useful to improve water resistance and lightfastness; and both of US 6,054,505 and US

6,005,022 emphasize the effects of quaternary ammonium salts on improving affinity and maintaining water resistance). However, Smith does not disclose or suggest the ozone resistance of oxygen attack. On the other hand, Yamanouchi is directed to the technical idea of accomplishing the function of the ozone resistance and the water resistance by using a film of polymeric latex. Yamanouchi states in paragraph [0382], “there is a difference between the retention of the coloring particulate dispersion and the retention of the polymer latex at the image-receiving material. When the polymer latex has an action that cuts off connection between the oil-soluble dyes and the outside,” which clearly indicates that the dye oil-drop and the latex of Yamanouchi exhibits their functions in separate forms. Accordingly, not only the structure, but the function of polymer latex of the Yamanouchi are different from those of the complex form (integration of the dye and the polymer) of the claimed subject matter of the instant application.

The dyes of Yamanouchi have electron-withdrawing groups, and thereby the oxidation potential of the dyes is raised and the ozone resistance is increased. Yamanouchi’s descriptions of the electron withdrawing property and oxidation potential/ozone resistance. are related only to the phthalocyanine dye. There is no description of the relationship between the electron withdrawing property and oxidation potential/ ozone resistance. With respect to the dye having a long conjugated system like azo dye, hue changes generally are affected by the introduction position or the withdrawal strength of the electron withdrawing substituent group, and thus, a specific substituent group of the azo dye skeleton is an usual variation target for changing hues. However, there is no ground for expanding the reasoning (or technical explanation) concerning phthalocyanine to azo dyes, and applicants respectfully submit that the Office unreasonably and groundlessly stretches its reasoning related to phthalocyanine to azo dyes.

Also, Smith neither discloses nor suggests the function of improving the ozone resistance of the dye as well as the polymer. Yamanouchi merely discloses the form of dissolving the oil-soluble dye in the oil, and thus is different from Smith and from the presently claimed subject matter. In conclusion, applicants respectfully submit that the Office fails to provide prima facie obviousness rejection of claims of the instant application.

Furthermore, Applicants respectfully disagree with the Office's allegation that the oil soluble dyes of Yamanouchi are readily available or synthesizable. The portion of Yamanouchi that the Office relies on is directed to cyanic dyes (phthalocyanine).

Accordingly, it is believed that the rejection is not sustainable and withdrawal is respectfully requested.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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